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Energy consumption in the United Kingdom

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1. Introduction

'Energy is eternal delight' - William Blake

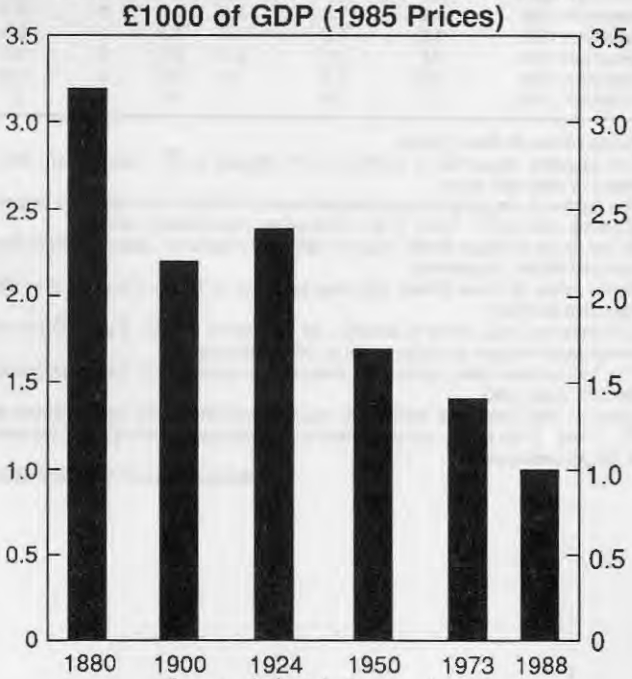
Not everyone would share Blake's sentiment. None would dispute, however, that energy is all-pervasive in modern society - a *sine qua non* for almost all of our activities. So it is not surprising that the major changes in availability of fuels and the conditions of their supply, particularly those during the last 15 years, have markedly affected the individual and the national economy. Consumers of energy are now much more sensitive to the waste of fuels and the efficiency with which they use them. Furthermore, in recent years it has become clear that the environmental effects of fuel production and use may be more profound and longterm than previously envisaged. For these reasons this article looks at energy consumption in the United Kingdom, and sets it in the context of developments in the national economy. It concentrates on trends over the four decades following the Second World War with increasing emphasis on developments since 1973. But first, it sets the scene with a brief look at trends in energy consumption before that period.

19th century energy consumption

Coal production and consumption expanded rapidly during the 19th century, with coal supplanting wood as the major fuel. Total coal use per head of population increased from 14 cwt in 1801 to 74 cwt in 1881. For much of the period energy consumption and the economy grew broadly in parallel; so there was little reduction in the primary energy requirement (tonnes of coal equivalent) per £1,000 of real gross domestic product(GDP) – which energy specialists refer to as the energy ratio. In 1880 this ratio was around 3.2 (see Chart 1).

Chart 1

Tonnes of Primary Energy to Produce £1000 of GDP (1985 Prices)



Source: Author's Estimate and Digest of UK Energy Statistics (DUKES)

The next 20 years saw continuing rapid growth in national income, but a slower increase than previously in primary fuel consumption as the impact of the introduction of more efficient machinery increased. By 1901, coal use per capita had increased to 78 cwt. By the turn of the century the energy ratio had fallen to about 2.2.

Early 20th century energy consumption

Coal production in the United Kingdom peaked just before the First World War (with the peak coal consumption at 81 cwt per head in 1911). Primary fuel consumption did not exceed its pre-First World War level until after the end of the Second World War. There were erratic movements in the energy ratio in the war years, and during the strikes in the 1920s. However, with GDP and energy consumption increasing only slowly, the energy ratio by the early to mid 1920s was above the level of 1900 (at around 2.4).

The next 25 years

Between the mid-1920s and the end of the Second World War, GDP rose markedly. As energy consumption did not exceed its pre-First World War peak, there was a dramatic reduction in the energy ratio. Although the energy ratio was erratic in the immediate post-Second World War period, by 1950 it had fallen to 1.7.

1950 to date

Both GDP and energy consumption increased from 1950 to 1973, but with the latter increasing more slowly, there was a further fall in the energy ratio to 1.4. Since 1973 the fall in the ratio has been greater and, by 1988, £1,000 of real GDP (at 1985 factor cost) required a primary energy input of one tonne of coal equivalent.

Today the energy ratio is only about one-third of its level a century ago. This fall in the ratio is a measure of how much the energy requirement per unit of output has decreased. However, this was not an uninterrupted fall. Chart 1 shows that a fall in the energy ratio is not common to every comparison between years. For example, between 1900 and 1924 the energy ratio increased. Comparisons between countries also show that even post-1973 a fall in the energy ratio was not a common experience in all countries throughout the period. Indeed, since 1976 the energy ratio of the non-OECD, non-communist world countries combined has increased. Even in a developed economy such as France, the energy ratio increased between 1982 and 1985.

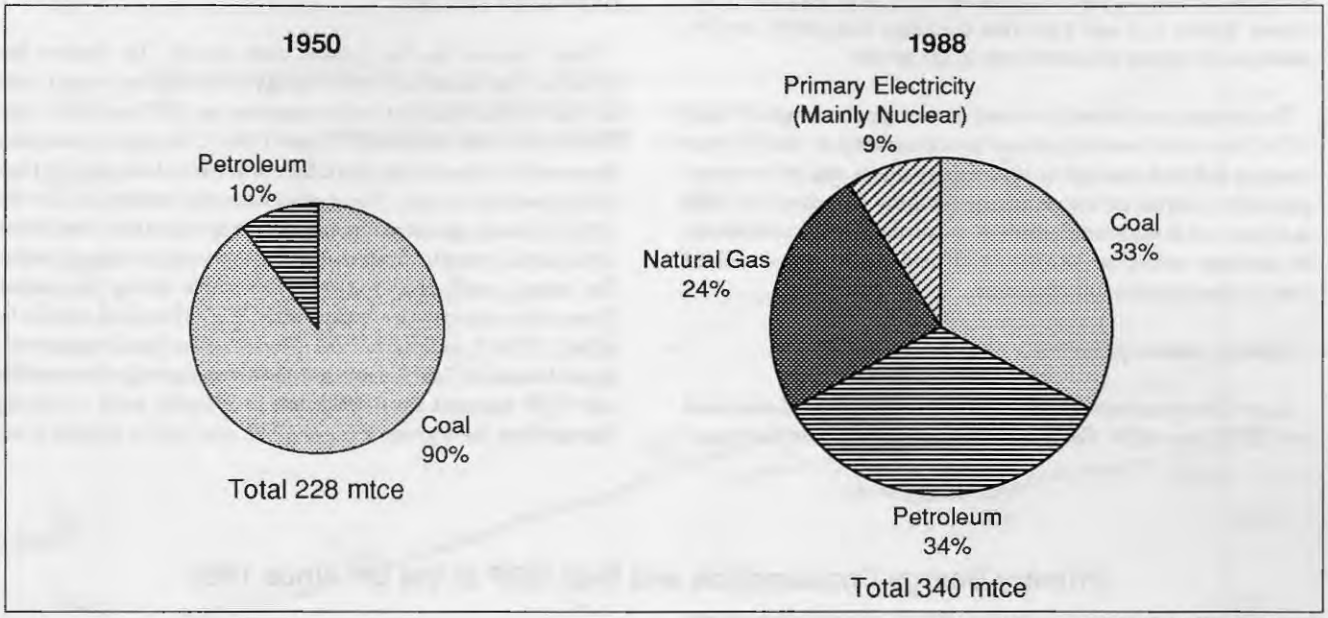
Thus, while technological improvements and other energy-efficient developments have dominated the decline in the energy ratio over the last century, the fall is not inevitable. Increased material standards of living and comfort, etc are influences which can lead to increasing energy consumption outstripping the growth of GDP. However, in developed economies generally there has been a secular downward trend in energy consumption per unit of GDP.

Since 1950 there have been major energy supply developments in the United Kingdom economy. These have seen the harnessing of nuclear power for the peaceful purpose of producing electricity; the development of offshore gas, and then oil resources; and the

Chart 2

UK Primary Energy Requirement

(not temperature corrected)



Source: DUKES & Energy Trends

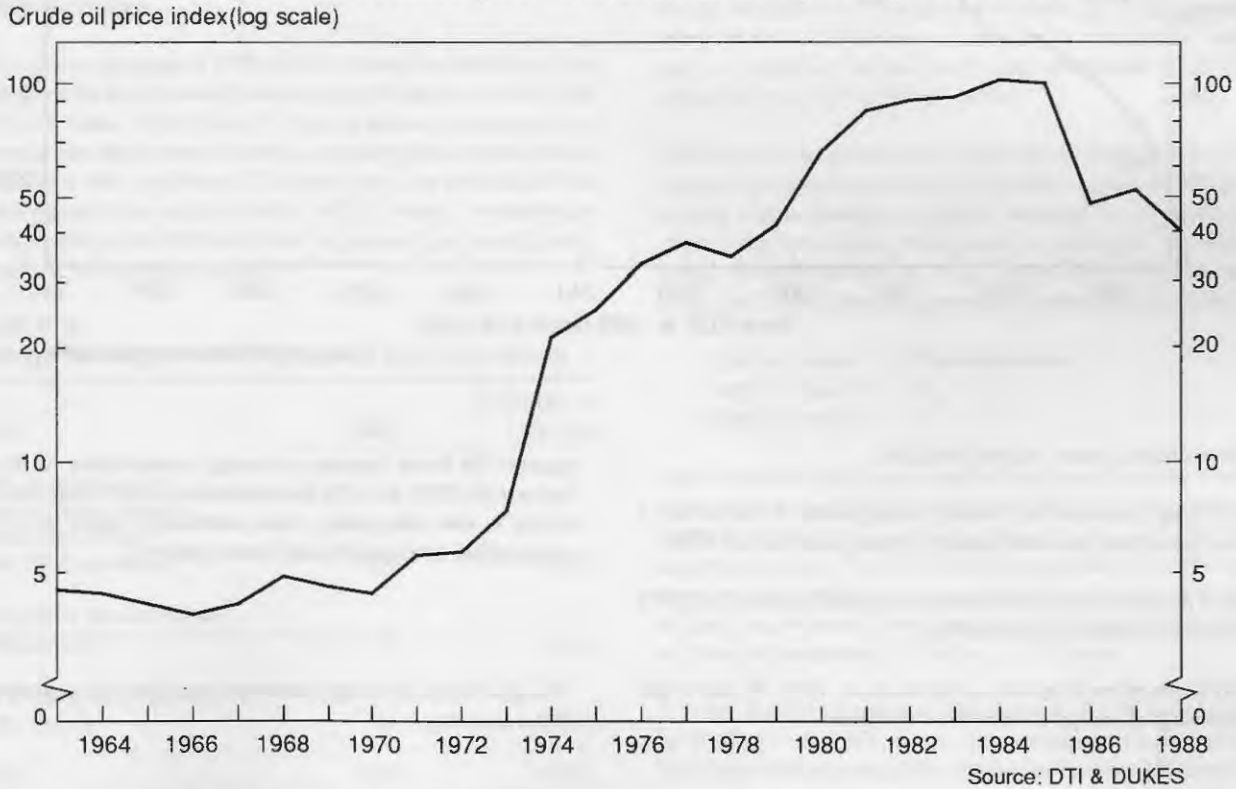
reduction in the size of the coal industry. Looking at the influence of these developments on primary energy consumption, Chart 2 shows how single fuel dominance has changed to multi-fuel share.

However, these momentous changes have not been the major influence on UK energy consumption. The major influences, as this article will show, have been the oil price 'hikes' in 1973 and 1979 and the subsequent recessions. Chart 3 shows the movements in the crude oil price index since 1964.

Chart 3

Crude Oil Price Index (1985=100)

(Based on price data for both imported and North Sea oil acquired by UK refineries - in £)



Source: DTI & DUKES

The major source of data for 1950 to date is the Department of Energy's *Digest of UK Energy Statistics* (DUKES) (1) . This publication gives more detailed figures and explanations of concepts and terms used than is possible in this article. Data from the Department of Energy's *Energy Trends* (2), and from the Central Statistical Office's - The CSO Blue Book (3) have also been used. Annex Tables 1, 2 and 3 provide the major time-series used to underpin the charts and comments in the article.

The remainder of the article examines energy consumption since 1950; how it has been influenced (predominantly by the oil price changes and feed-through to other energy prices and the economy generally); and the savings in energy resulting. The choice of 1950 as a base year is somewhat arbitrary and dictated by the availability of consistent annual series of real GDP and temperature-corrected energy consumption from that date.

2. Energy consumption

Chart 4 illustrates how energy consumption has moved compared with GDP since 1950. For most of the period both have increased.

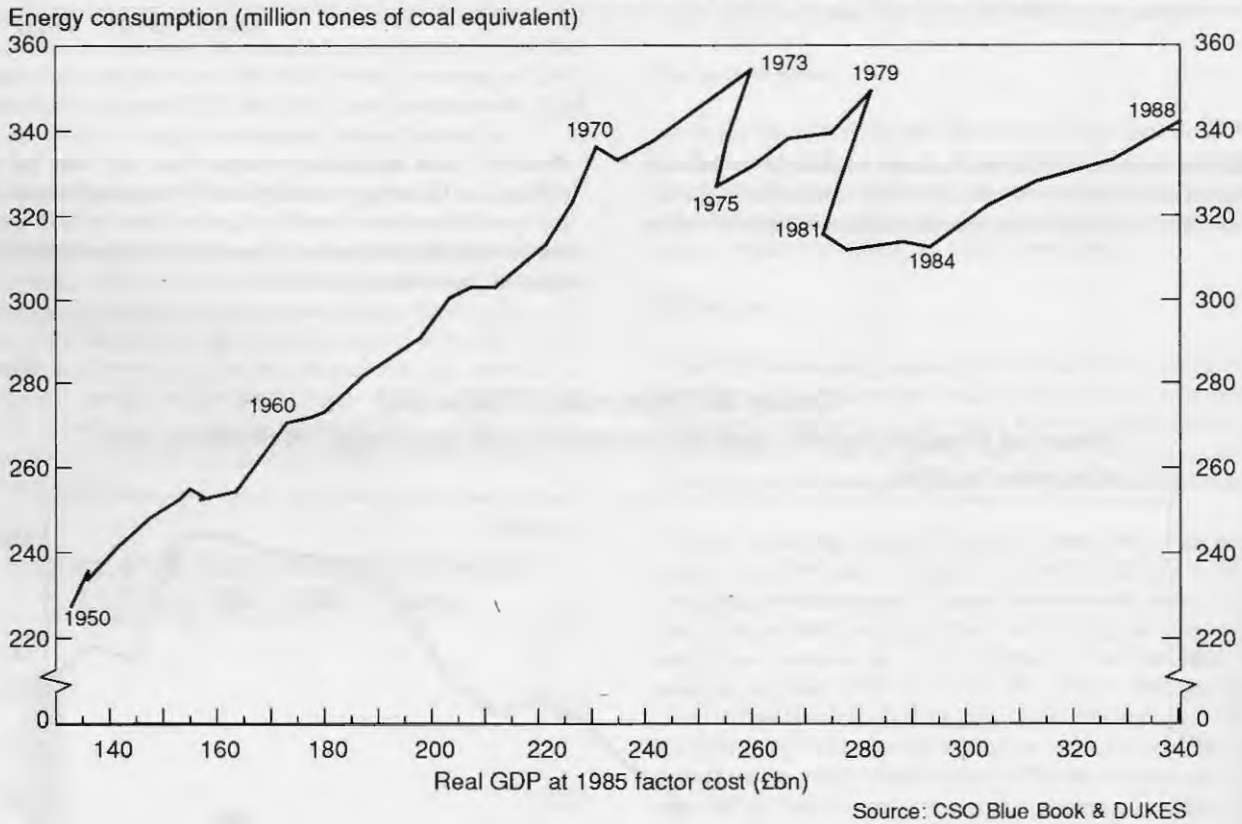
(iv) A further plunge in energy consumption and fall in output 1979-81 as the second oil price hike effects worked through.

(v) Resumption of growth in the economy after 1981 and in energy consumption after 1982, and in the relationship of energy consumption and GDP.

Chart 5 shows the five phases more clearly. The broken line illustrates hypothetically how energy consumption would have moved if it had changed at the same rate as GDP each year from 1950 to date. Thus, from 1950-73 (and 1960-73) energy consumption increased at a slower rate than GDP, as indeed it had done for most of the previous century. The gap between the broken line and the 1950-73 fitted regression line can be interpreted as the contribution of the secular trend to lower energy requirements per unit of output. The energy coefficient[1] was relatively stable during this period. These relationships were broken after 1973. (Previous articles by Allen in 1976 (4) and Hull in 1981 (5) comment on this development.) As can be seen in Chart 5, a relationship between energy consumption and GDP resumed from 1975 but at a lower level of energy consumption for a given level of GDP, and with a slightly lower

Chart 4

Primary Energy Consumption and Real GDP of the UK since 1950



Source: CSO Blue Book & DUKES

Five distinct phases can be identified:

(i) A long period of fairly steady, even growth 1950-73 with a stable relationship between energy consumption and real GDP.

(ii) A plunge in energy consumption and fall in output 1973-75 as the first oil price hike took effect.

(iii) Resumption of growth in the economy 1975-79, and in the relationship of energy consumption and GDP.

gradient (ie lower increase in energy consumption for a given increase in GDP). In 1979, the relationship was broken once more before a new relationship was established, again at a lower consumption level and slightly lower gradient.

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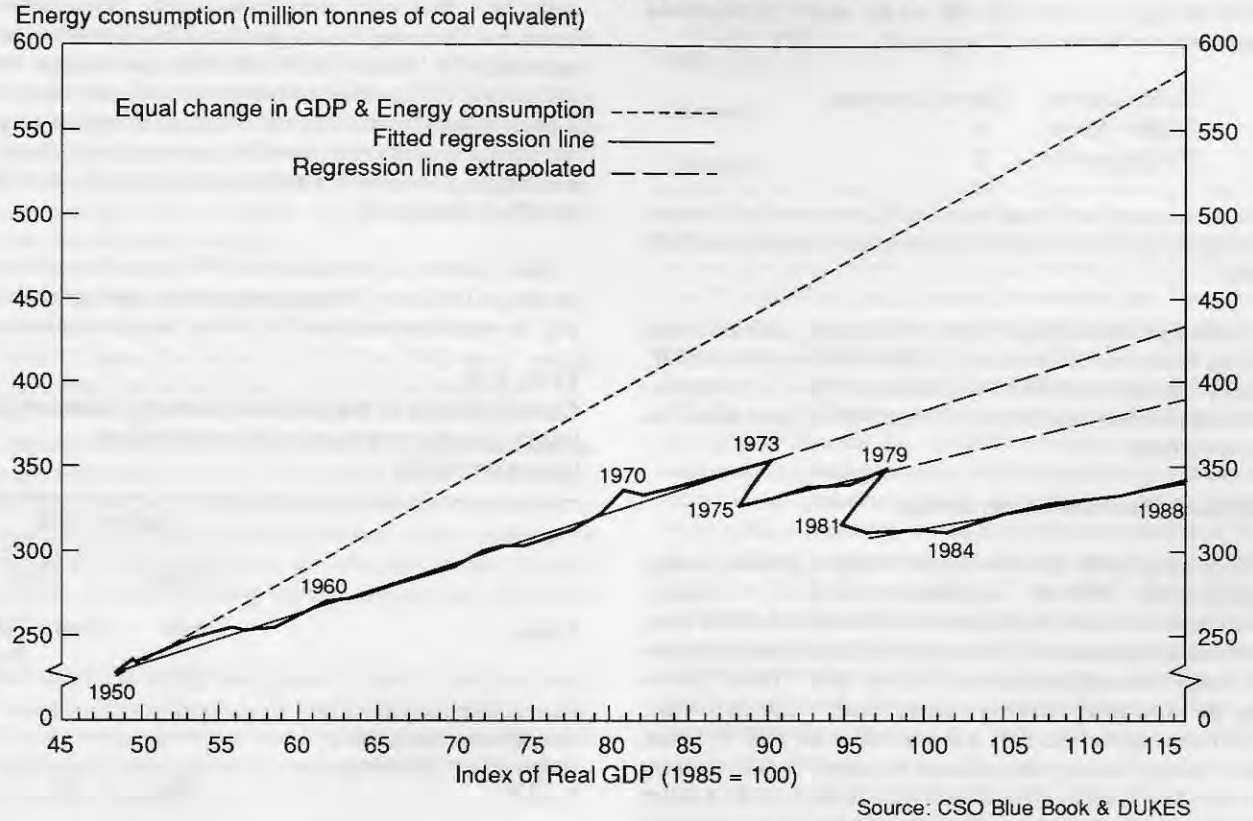
[1]The growth rate of energy consumption divided by the growth rate of the economy.

Chart 5

Changes in the Primary Energy Consumption
Real GDP relationship of the UK since 1950



Source: CSO Blue Book & DUKES

The 1973 and 1979 'shocks' to the oil price and the reactions to them, therefore, had a 'ratchet' downwards effect each time on energy consumption levels. The large fall in oil prices from 1985-88 (Chart 3), and the effect this had on energy prices generally, does not appear to have reversed the ratchet effect and supports the general view that the improvements achieved in energy conservation/ efficiency are not transient.

3. Energy savings

Energy consumption in 1988 could be viewed as being less than two- thirds the level it would have reached if it had increased in line with GDP since 1950 (Chart 5). Table A below gives some very approximate estimates of the savings in energy consumption which result from this hypothesis. The first row is an estimate of the contribution of the secular trend to reduced energy consumption (measured from the 1950 base) and the next two rows the estimates of specific ratchet effect savings.

TABLE A
Energy savings (million tonnes of coal equivalent)

From:	1988	Cumulative 1950-88
Rate of increase in energy consumption below that of GDP from 1950 onwards	150	2550
1973 price hike **ratchet** extra saving	40	450
1979 price hike **ratchet** extra saving	50	350
Total	240	3350

The cumulative savings since 1950 on this basis total about ten years energy consumption at current levels. Expressed in money terms the cumulative savings are very approximately £370 billion at current prices (or about £250 billion excluding taxes, distributors' margins, etc). Not far short of one year's GDP!

In 1988 the savings were approximately 240 million tonnes of coal equivalent (mtce), about 70 per cent of the year's primary energy requirement. This equates to about £27 billion in money terms (or about £19 billion excluding taxes, distributors' margins etc) – equivalent to one year's total investment (GDFCF) by industrial and commercial companies.

Perhaps of even greater significance are the implications of these savings in terms of reductions in emissions of gases such as carbon dioxide which contribute to global warming via the 'greenhouse effect'; sulphur dioxide which adds to acid rain; and nitrogen oxides which contribute to both. The estimates are very broad-brush, but in 1988 the savings equate to reductions in emissions of:

Carbon dioxide - 750 million tonnes
Sulphur dioxide - 10 " "
Nitrogen oxides - 4 " "

Note that these estimates include reductions resulting from the change in the mix of fuels used since 1950, eg the large reduction in the amount of coal consumed and its share of total energy consumption (see Chart 2). They also assume that the 1988 energy requirements could have been met from the 1950 mix of fuels. An estimate less affected by these assumptions is given in the paragraph below of the reductions in 1988 on a 1973 base.

Table A shows estimated 1988 savings of 150 mtce based on projections of the 1950 energy ratio compared with projections of the energy consumption/GDP relationship between 1950 and 1973.

Taking the secular progress to 1973 for granted, the equivalent savings measured projecting the 1973 energy ratio compared with projection of the energy consumption/GDP relationship is 30 mtce. The remaining ratchet effect savings in Table A of 90 mtce make a total saving of 120 mtce in 1988 on this basis. The equivalent approximate reductions in emissions are:

Carbon dioxide	-	300 million tonnes
Sulphur dioxide	-	4 " "
Nitrogen oxides	-	1 " "

The estimates are very broad-brush, but illustrate savings of carbon dioxide emissions of about half the estimated current annual UK total.

Leaving aside the savings - 30 mtce - estimated to accrue from the secular trend towards lower energy input for a unit increase in GDP, energy consumption in 1988 is an estimated 20 per cent lower than it would have been but for the 1973 and 1979 oil price hikes (the ratchet effect).

4. Primary/final user energy savings

Up to this point the data have related mainly to **primary** energy consumption 1950-88, temperature-corrected, ie energy consumption in each year adjusted for differences from the long-term average temperature. The remainder of the article concentrates on energy consumption between 1960 and 1988. (Chart 5 shows that the relationship between primary energy consumption and GDP between 1960 and 1973 is similar to that for 1950-73.) Final users' energy consumption measures the supply of fuels (primary or secondary as appropriate) to final users. It differs from primary (which assesses the total supply to the economy of primary fuels and their equivalents) by excluding fuel industry **own** use, and conversion, transmission and distribution losses – although it includes conversion losses by final users. Final users' energy consumption is generally presented in million therms rather than million tonnes of coal equivalent (mtce) used hitherto for primary energy. (An approximate conversion factor is 1 mtce = 250 million therms.) 1960 is the earliest year that data consistent with 1988 are available for **final** users' energy consumption. These data are not temperature-corrected, but examination of the key years and turning points (eg 1950, 1960, 1973, 1979 and 1988) indicates that, with the exception of 1979, average temperatures in each year were similar to the long-term mean. 1979 was colder, so energy consumption uncorrected for difference from the long-term mean temperature was higher. The following analysis draws heavily on work by Schaffer & Semple (6).

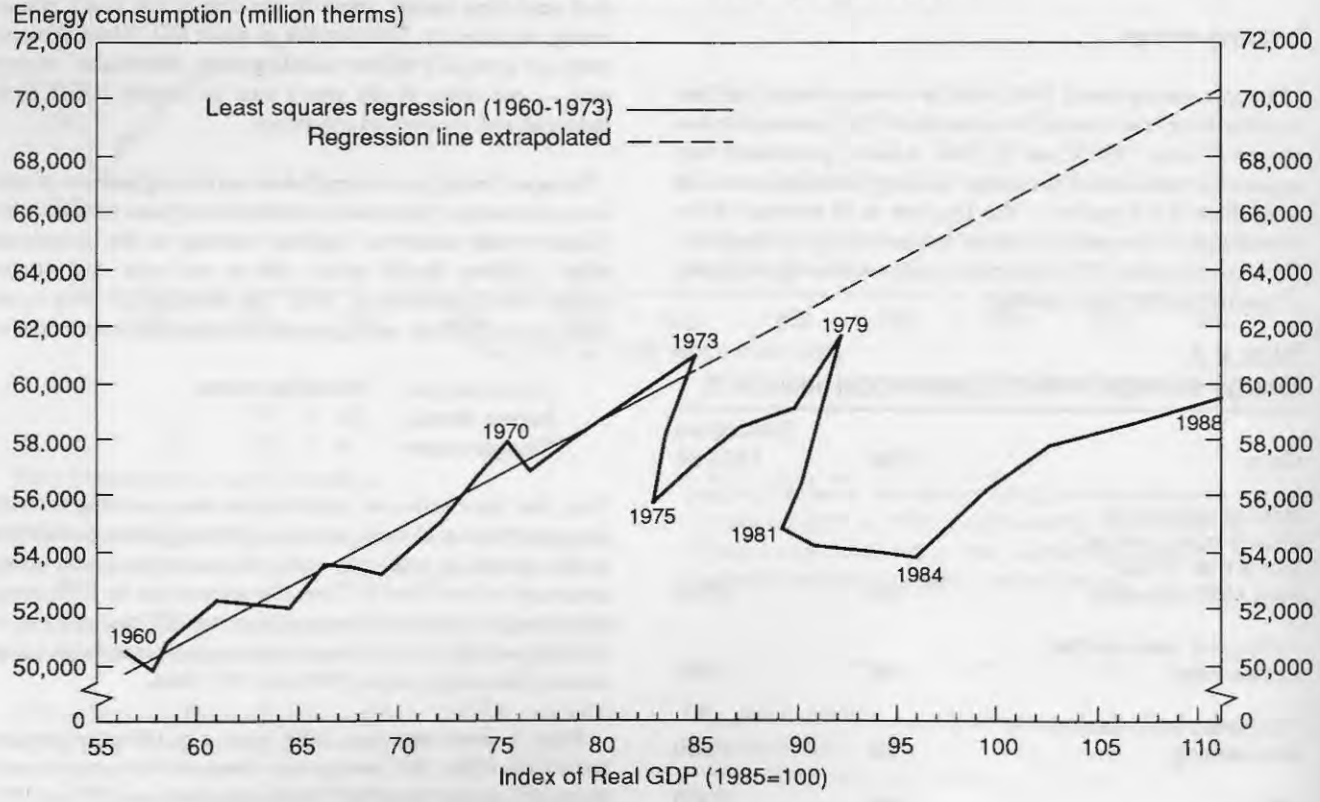
Table B shows the results of post-1973 projections in terms of savings in final users' energy consumption, and compares them with the equivalent estimates for primary energy requirements:

TABLE B
Contributions to the decline in energy consumption
(1988 actual compared with expectations based on 1973)

	Savings 1988		
	Primary	Final	
Factor	mtce	mtce	billion therms
Rate of increase in **energy consumption** *below* rate of increase in GDP	30	38	9.5
Ratchet effects	90	43	10.8
Total	120	81	20.3

Chart 6

Final Users Energy Consumption (inc Transport) in UK and Index of Real GDP (1960-1988)



The total saving in final users' energy consumption is less than that in primary consumption. As a proportion of 1988 totals, however, it was about one-third, similar to the proportionate saving in primary energy consumption.

The savings in final users' energy consumption in 1988 attributable to the ratchet effects totalled 10.8 billion therms. Chart 6 illustrates that these were broadly similar to those shown in Chart 5 for primary energy consumption. For final consumption, the resumption of the energy consumption/GDP relationship in each case (1975 and 1984), while starting from a lower level each time (like that for primary energy), has not resumed at a lower gradient each time (unlike that for primary energy).

5. Where have the savings occurred?

Table C shows the sectoral split of the final users' savings resulting from the ratchet effect (ie 10.8 billion therms).

The figures in Table C have been derived from the relationships between each sector's energy consumption and GDP. Thus, they may differ from the estimates quoted elsewhere in this article or obtained from the charts, since in these cases energy consumption is related to what is considered the most appropriate economic aggregate, eg manufacturing output, real personal disposable income.

Thus savings in energy consumption in industry and commerce were partly offset by increases in both the domestic and transport sectors above those to be expected from the projection of the 1960-73 relationships between energy consumption and the appropriate output/income measures.

Chart 7 shows the energy consumption savings in **manufacturing** in 1988. All the savings (over 9 billion therms) were in fossil fuel consumption.

TABLE C
Sectoral savings - 1988 (billion therms)

Manufacturing		13.2	14.5
Commerce and Public sector	0.8	1.3	
Agriculture	0.5		
Domestic		-2.0	-3.7
Transport		-1.7	

It also shows that no significant increase in fossil fuel consumption in manufacturing occurred during the recovery periods following the 1973 and 1979 oil price shock-induced recessions. Also, the fall in fossil fuel consumption in manufacturing industry was much greater after 1979 than after 1973. This differs from Chart 5 where the post-1979 fall was not significantly larger than that post-1973. With the post-1979 recession biting harder in manufacturing relative to total GDP than did the post-1973 recession, more drastic cuts were made in operating costs such as labour and energy. Additionally, more capital- intensive methods of production, higher levels of mechanisation, and energy-saving technologies were adopted. These cut fossil fuel consumption but not consumption of electricity. Schaffer in 1989 (7), comparing 1979 and 1987, shows that over this period the reduction of energy demand per unit of output within manufacturing owed little to output effects, or structural change, but was mainly the result of energy efficiency measures defined widely to include the effects of technological change. Despite falls in the real and/or relative price of fuels, and the growth of 25 per cent in manufacturing output, the relative stability of fossil fuel consumption in manufacturing since 1982 shows the result of such investment. This in no small measure was due to the continuing efforts to promote energy efficiency. The Energy Efficiency Office(EEO) was set up in 1983.

Chart 7

Manufacturing Industry Fossil Fuel Consumption in UK and Index of Manufacturing Output (1960-1988)

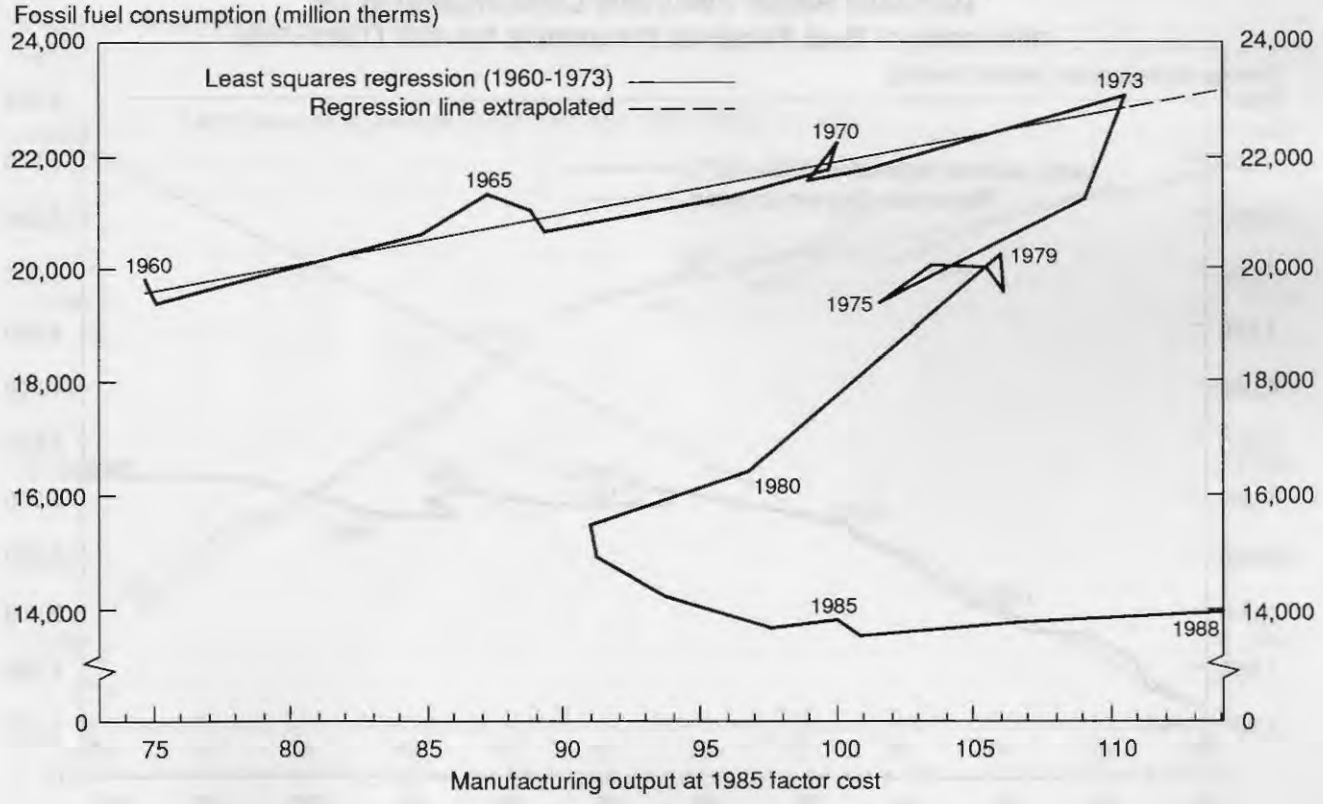
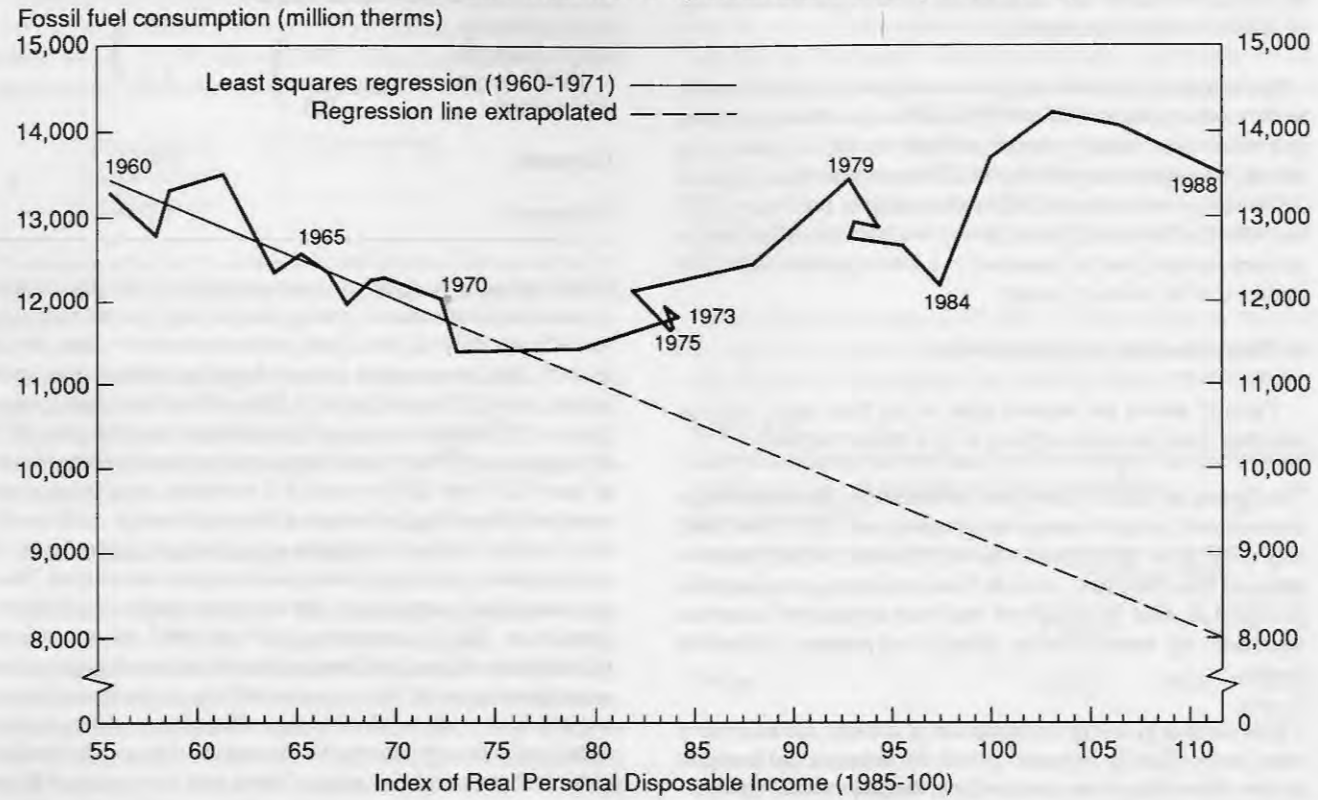


Chart 8

Domestic Sector Fossil Fuel Consumption in UK and Index of Real Personal Disposable Income (1960-1988)



The savings in **commerce** etc were mainly in fossil fuels. Here the recovery of energy consumption to former levels after the 1973 oil price shock induced recession was not repeated in the post-1979 experience.

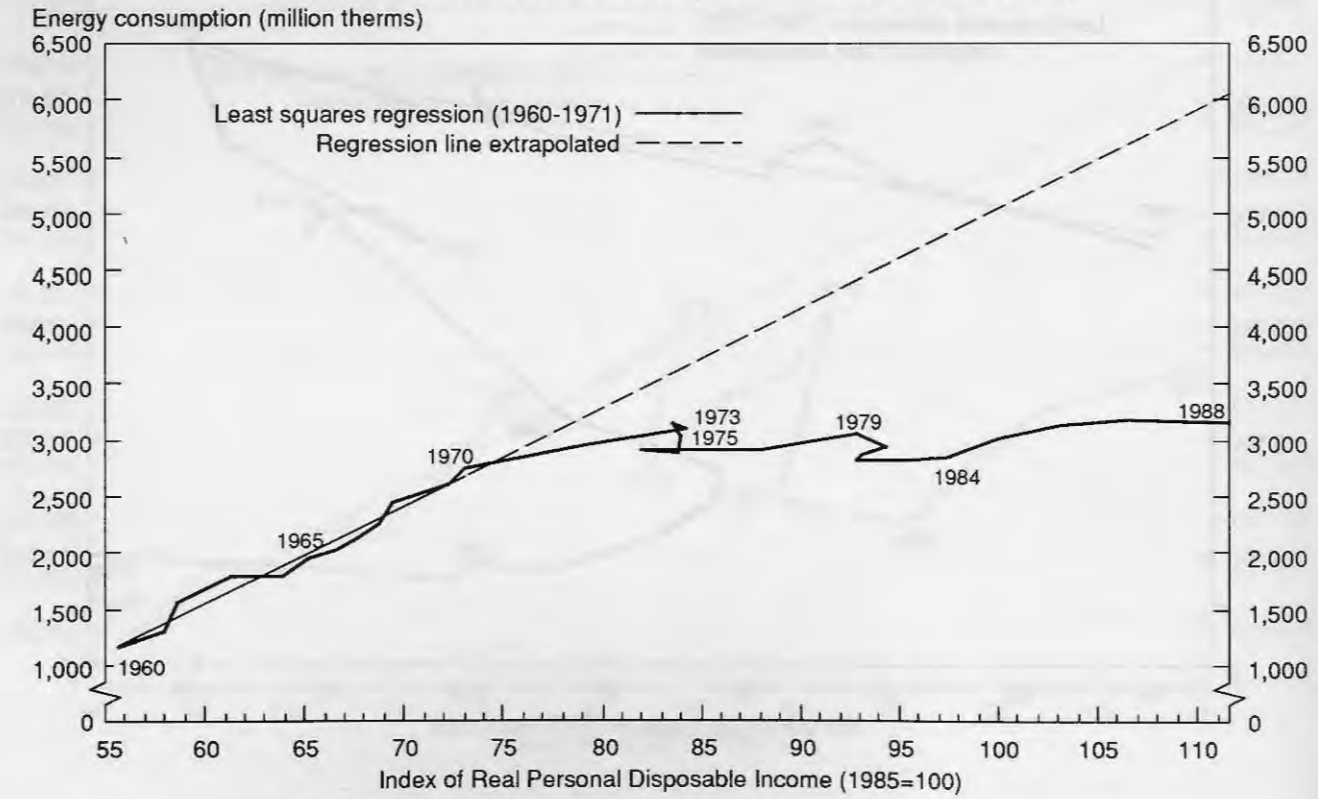
Domestic sector consumption of fossil fuels fell between 1960-71 as real personal disposable income(RPDI) increased. (See Chart 8.)

However, the substitution of electricity by natural gas turned the relationship round, and the overall movement in fossil fuel consumption has been upwards since 1971 (with increasing RPDI). The chart shows 'dis-saving' of 5.5 billion therms of fossil fuels in 1988 projecting consumption on the basis of the 1960-71 relationship.

The concomitant is shown in Chart 9. This illustrates how domestic electricity consumption increased until the turn of the Seventies, and has remained relatively static thereafter.

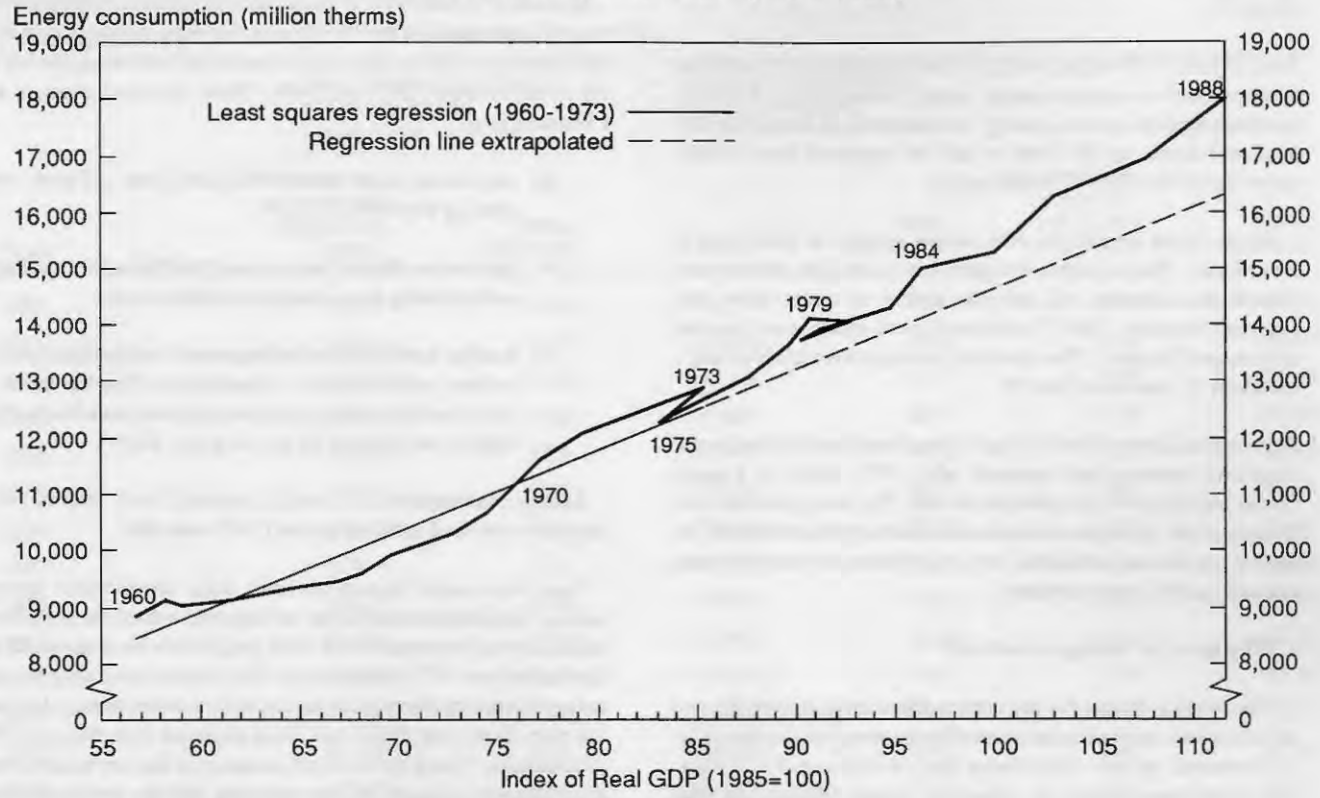
Chart 9

Domestic Sector Electricity Consumption in UK and Index of Real Personal Disposable Income (1985=100)



Transport Sector Energy Consumption in UK and Index of Real GDP (1960-1988)

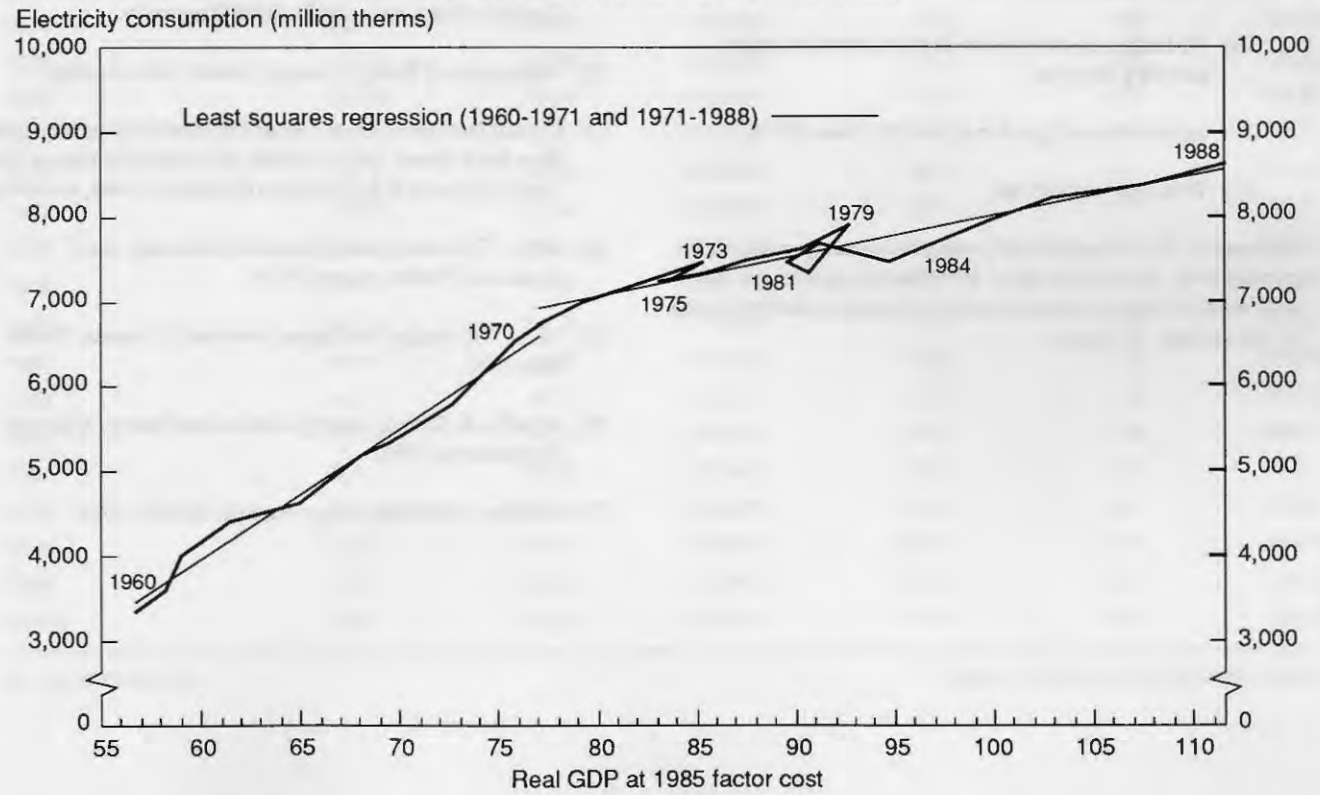
Chart 10



The savings in domestic electricity are more than offset by the increase in fossil fuels (notably natural gas consumption). These developments reflect the growth of central heating (particularly gas) with accompanying increase in standards of comfort demanded. Another contributory factor is the increase in the number of households which in terms of energy consumption has more than outweighed a decline in average size of household. Since 1971 the number of households has increased by about 3 million. (The GB total was about 21.2 million in 1987.) Over the same period the average size of household fell from 2.9 to under 2.6.

Final Users Electricity Consumption (ex Transport) in UK and Index of Real GDP (1960-1988)

Chart 11



Transport sector energy consumption (virtually all fossil fuel) has increased over the whole period since 1960 as shown in Chart 10.

The 1973 and 1979 oil price hikes would appear to have exerted no lasting effect on transport sector energy consumption. As living standards have improved, energy consumption in this sector has increased more rapidly than would be expected from simple projection of the 1960-73 relationship.

About 70 per cent of the total ratchet savings in 1988 were in fossil fuels. This is despite the growth in fossil fuel consumption in both the domestic and transport sectors at a rate above that expected from the 1960-73 relationships of energy consumption with output (income). The remaining savings were in electricity - see Chart 11 (and also Chart 9).

Although similar to Chart 9, Chart 11 demonstrates that final users' electricity consumption increased after 1971, albeit at a much slower rate than over the previous decade. The static position after the turn of the Seventies for domestic electricity consumption (as natural gas became available) was not a feature in manufacturing and only partly so in commerce.

6. Why have the savings occurred?

The obvious trigger for the ratchet effect savings were the two oil-price hikes, and their subsequent effect on energy prices generally, and economic growth. Underlying these is evidence of a longer-term trend improvement (ie reduction) in both primary and final users' energy use relative to the growth of the economy. Schaffer and Semple (6) analyse the effects in detail, but in addition to the secular movement containing the combined effects of all the factors referred to below, the ratchet savings are attributed specifically to these five factors (some of which result in 'dis-savings').

(i) **Energy efficiency**
(including technological developments)

(ii) **Structural change** (1973-88)

(iii) **Reduction in conversion and distribution losses, industry own use**

(iv) **Substitution of gas for electricity** (from 1971)

(v) **Transport sector use**

Factors (i), (ii), (iii) and (iv) all contribute to energy savings at the primary level. At the final users' level Factor (iii) does not apply, and Factor (iv) joins (v), as shown earlier in this article, in contributing to 'dis-savings' of energy.

7. Conclusion

Both the 1973 and 1979 oil-price hikes and subsequent recessions exerted a downwards ratchet effect on energy consumption/GDP relationships, with no apparent reverse effect following the fall in oil prices between 1985 and 1988. These observed changes are consistent with:

(a) recessional shake-out of inefficient firms and plant, and altering **structure** of GDP;

(b) application of **new, more (energy) efficient technology**; underpinning these changes is a third factor:

(c) **secular movement** towards greater energy efficiency in primary and final users' consumption. This has taken place over the whole period and includes the effects of (a) and (b) not induced by the oil-price 'hikes'.

Energy consumption as a result is currently lower than in 1973, despite a one-third increase in real GDP since then.

Thus there would appear to have been considerable energy savings (and therefore monetary savings and reductions in gaseous emissions too) compared with what might have been expected on the basis of pre-1973 relationships. This, has occurred despite 'dis-savings' in the transport and domestic sectors where energy demand has risen faster than might have been expected from the pre-1973 relationships. This is the result of increases in fuel use in air travel; road transport of goods; private motoring; and the introduction of central heating and increased comfort standards demanded. All the savings occurred in manufacturing, and, to a lesser extent, in the miscellaneous sector (which covers commerce, the public sector, and agriculture). In these sectors virtually all the savings were in fossil fuel use rather than in electricity.

References

(1) Department of Energy. *Digest of United Kingdom Energy Statistics* (latest issue 1988). HMSO annually.

(2) Department of Energy. *Energy Trends*. DEn monthly.

(3) Central Statistical Office. *United Kingdom National Accounts*, Blue Book (latest 1988). HMSO, plus quarterly figures for National Income & Expenditure (*Economic Trends*, quarterly).

(4) Allen. 'The energy coefficient and the energy ratio' *Economic Trends*, August 1976.

(5) Hull. 'The energy coefficient revisited' *Economic Trends*, May 1981.

(6) Schaffer & Semple. *Energy demand and energy efficiency* (forthcoming 1989).

(7) Schaffer. *Industrial energy markets*. HMSO. 1989.

ANNEX

TABLE 1
Primary energy consumption, GDP and energy ratio

Years	Total inland consumption of Primary Energy (temperature corrected)		Gross Domestic Product (average estimate) at 1985 factor cost		Energy ratio	
	Million tonnes of coal equivalent (mtce)	Index 1985=100	£ million	Index 1985=100	Tonnes of coal equivalent per £1000 of GDP	Index 1985=100
1950	227.7	70.6	132211	43.4	1.72	163.07
1951	235.5	73.1	135818	44.5	1.73	164.05
1952	234.0	72.6	136154	44.7	1.72	162.60
1953	241.2	74.8	141527	46.4	1.70	161.24
1954	248.6	77.1	147387	48.3	1.69	159.58
1955	253.0	78.5	153079	50.2	1.65	156.37
1956	255.0	79.1	155044	50.8	1.64	155.61
1957	253.6	78.7	157649	51.7	1.61	152.20
1958	252.6	78.4	157097	51.5	1.61	152.13
1959	254.6	79.0	163561	53.6	1.56	147.27
1960	270.9	84.1	173217	56.8	1.56	147.97
1961	272.2	84.5	177572	58.2	1.53	145.03
1962	273.6	84.9	179878	59.0	1.52	143.91
1963	282.3	87.6	187419	61.5	1.51	142.51
1964	291.2	90.4	198069	65.0	1.47	139.10
1965	300.7	93.3	203776	66.8	1.48	139.61
1966	302.8	93.9	207571	68.1	1.46	138.02
1967	303.2	94.1	212089	69.6	1.43	135.26
1968	312.9	97.1	221421	72.6	1.41	133.70
1969	323.0	100.2	226830	74.4	1.42	134.72
1970	336.3	104.3	231350	75.9	1.45	137.53
1971	332.9	103.3	234999	77.1	1.42	134.03
1972	337.4	104.7	241428	79.2	1.40	132.22
1973	354.2	109.9	259998	85.3	1.36	128.89
1974	337.9	104.8	255797	83.9	1.32	124.98
1975	326.9	101.4	253651	83.2	1.29	121.93
1976	331.5	102.9	260596	85.5	1.27	120.35
1977	338.2	104.9	267260	87.6	1.27	119.72
1978	339.1	105.2	275376	90.3	1.23	116.51
1979	349.3	108.4	282782	92.7	1.24	116.87
1980	327.2	101.5	276495	90.7	1.18	111.96
1981	315.3	97.8	273462	89.7	1.15	109.09
1982	311.7	96.7	278420	91.3	1.12	105.92
1983	313.6	97.3	288703	94.7	1.09	102.77
1984	312.1	96.8	293909	96.4	1.06	100.47
1985	322.3	100.0	304933	100.0	1.06	100.00
1986	328.3	101.9	313970	103.0	1.04	98.93
1987	333.3	103.4	327933	107.5	1.02	96.16
1988p	343.1	106.5	340257	111.6	1.01	95.40

p = provisional data

Sources:DUKES, DEn; CSO Blue Book

TABLE 2
Key Indices

1985=100

Years	GDP(A) at 1985 factor cost	Manufacturing Output	Real Personal Disposable Income	Services Sector Output	Crude oil Price
1960	56.8	74.7	55.7	56.5	..
1961	58.2	74.9	58.0	57.9	..
1962	59.0	75.1	58.6	58.7	..
1963	61.5	77.7	61.3	60.6	4.54
1964	65.0	84.8	63.9	63.0	4.44
1965	66.8	87.2	65.2	64.5	4.16
1966	68.1	88.8	66.6	65.9	3.89
1967	69.6	89.3	67.6	67.3	4.12
1968	72.6	96.1	68.8	69.2	4.92
1969	74.4	99.7	69.4	70.3	4.60
1970	75.9	100.0	72.2	72.3	4.43
1971	77.1	99.0	73.1	74.2	5.62
1972	79.2	101.1	79.2	77.2	5.68
1973	85.3	110.5	84.2	80.5	7.42
1974	83.9	109.1	83.6	80.6	21.45
1975	83.2	101.6	84.0	81.5	25.18
1976	85.5	103.5	83.8	83.3	33.11
1977	87.6	105.5	82.0	84.4	37.60
1978	90.3	106.1	88.0	87.1	34.89
1979	92.7	106.0	92.9	89.6	42.43
1980	90.7	96.8	94.3	89.2	65.57
1981	89.7	91.0	93.2	89.5	84.59
1982	91.3	91.2	93.4	90.8	89.64
1983	94.7	93.7	95.5	93.7	93.18
1984	96.4	97.6	97.3	97.7	103.28
1985	100.0	100.0	100.0	100.0	100.00
1986	103.0	100.9	103.1	103.7	48.07
1987	107.6	106.6	106.5	109.1	52.07
1988	111.6	114.1	111.6	114.1	40.76

Sources: CSO Blue Book; DTI

TABLE 3
Energy consumption by final user

million therms

	Final Users (Inc Agriculture) Consumption				Manufacturing Industry Consumption			Commercial and Public Sector Consumption			Domestic Sector Consumption			Transport Sector Energy Consumption
Year	Energy (Inc. Trans)	Energy (exc. Trans)	Fossil Fuel (exc. Trans)	Electricity (exc. Trans)	Energy	Fossil Fuel	Electricity (public supply only)	Energy	Fossil Fuel	Electricity	Energy	Fossil Fuel	Electricity	
1960	50526	41714	38342	3372	21351	19832	1519	5340	4785	555	14422	13273	1149	8812
1961	49871	40759	37123	3636	21163	19592	1571	4875	4271	604	14081	12776	1305	9112
1962	50927	41912	37866	4046	20994	19370	1624	5391	4698	693	14873	13314	1559	9015
1963	52380	43268	38836	4432	21426	19724	1702	5882	5117	765	15270	13485	1785	9112
1964	52132	42789	38136	4653	22509	20628	1881	5505	4697	885	14117	12330	1787	9343
1965	53668	44231	39209	5022	23295	21297	1998	5756	4871	936	14517	12564	1953	9437
1966	53543	43939	38717	5222	23079	21027	2052	5833	4897	988	14381	12340	2041	9604
1967	53301	43373	37982	5391	22760	20682	2078	5909	4821	1079	14083	11955	2128	9928
1968	55169	44856	39036	5820	23518	21260	2258	6088	5009	1166	14529	12254	2275	10313
1969	56768	46102	39857	6245	24140	21740	2400	6497	5331	1230	14720	12256	2464	10666
1970	57953	46767	40200	6567	24689	22198	2491	6685	5455	1276	14643	12014	2629	11186
1971	57002	45368	38611	6757	24067	21561	2506	6368	5092	1318	14141	11387	2754	11634
1972	58041	45956	38952	7004	24256	21759	2497	6455	5137	1428	14395	11429	2966	12085
1973	61034	48158	40656	7502	25790	23058	2732	6567	5139	1311	14917	11801	3116	12876
1974	58284	45872	38585	7287	23791	21204	2587	6248	4937	1422	15086	11925	3161	12412
1975	55876	43615	36353	7262	21953	19381	2572	6218	4796	1473	14713	11668	3045	12261
1976	57327	44611	37252	7359	22827	20068	2759	6546	5073	1555	14546	11641	2905	12716
1977	58533	45482	37960	7522	22815	20015	2800	6887	5332	1555	15049	12117	2932	13051
1978	59208	45484	37831	7653	22454	19587	2867	6939	5297	1642	15359	12430	2929	13724
1979	61739	47702	40181	7927	23214	20226	2988	7255	5517	1738	16501	13440	3061	14037
1980	56537	42428	35057	7371	19147	16426	2721	6888	5135	1753	15816	12877	2939	14109
1981	54921	41303	33817	7486	18094	15465	2629	6854	5076	1778	15797	12915	2882	13618
1982	54279	40370	32657	7713	17436	14914	2522	6807	5006	1801	15569	12744	2825	13909
1983	54043	39728	32242	7486	16720	14189	2531	6943	5043	1900	15488	12658	2830	14315
1984	53890	38891	31237	7654	16311	13628	2683	6987	5105	1882	15044	12181	2863	14999
1985	56319	41035	33048	7987	16517	13803	2714	7254	5230	2024	16698	13688	3010	15284
1986	57841	41584	33341	8243	16229	13496	2733	7442	5304	2138	17348	14215	3133	16257
1987	58677	41737	33322	8415	16609	13747	2862	7329	5098	2231	17253	14071	3182	16940
1988p	59542	41548	32902	8646	16860	13945	2915	7489	5058	2431	16661	13501	3160	17994

p = provisional data

Sources: DUKES, Energy trends